DRAFT

City of San Diego
Urban Forest Management Plan

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For: The City of San Diego

Draft Date:
January 21, 2015

Executive Summary

This plan outlines the objectives and actions needed to sustain, protect, and enhance the urban forest in the City of San Diego. The street trees and the trees in parks and open space provide many benefits to residents and visitors—they provide shade, save energy, improve air quality, increase property values, provide wildlife habitat, reduce stormwater runoff, and enhance quality of life. This plan is meant to be a working document that will be continually implemented and monitored during the next 20 years.

This Urban Forest Management Plan discusses issues and trends that are affecting San Diego's urban forest. The most recent tree inventory was completed in 2003, and there is a need for an updated inventory and a tree canopy assessment. Current regulations and management practices were assessed, and issues were identified from both City staff and community members.

The goals for the urban forest are outlined in the 2008 General Plan. This Urban Forest Management Plan outlines the objectives and actions for achieving those goals, principally to:
- Establish and maintain optimal levels of tree cover to maximize ecosystem benefits provided by the urban forest and an optimal level of age and species diversity.
- Maintain trees in a healthy condition through good tree care and management practices.
- Incorporate street tree plans and urban forest management in community plan updates.
- Require planting and maintenance of trees in development permits.
- Foster public education and community support for the local urban forestry program.

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Introduction

San Diego is the eighth-largest city in the United States and the second largest in California, with a 2010 population of 1.3 million. San Diego is known for its mild, year-round climate, tourist destination, deep harbor, educational institutions, and technology-based industries in the southwest corner of California.

San Diego's tree canopy provides significant contributions to the quality of life for residents and visitors, because trees make a vital and affordable contribution to its sense of community, walkable neighborhoods, energy savings, and air quality. The urban forestry program is critical to meeting the city's commitment to sustainability, carbon sequestration, stormwater reduction, water conservation, and climate change. Goals for this program were set in the 2008 General Plan.

A diminished urban forestry program reduces public assets, costs taxpayers money, exposes the city to liability, and eliminates grant-funding eligibility. Over the past decade, San Diego's tree cover has declined; budgets for tree planting and maintenance have been reduced, and landscape code violations are given lower priority for enforcement. A long-range plan, guided by urban forestry expertise, is needed to bring together existing policies and guidelines, best urban forestry management practices, and community planning. This Urban Forest Management Plan provides an overall strategy that will help San Diego maximize its urban forest benefits for years to come.

Overview

Historical Context
[section will be added in final draft]

Environmental Context
Located along the coast of the Pacific Ocean, San Diego's subtropical climate is characterized by warm, dry summers and mild winters with most of the annual precipitation falling between December and March. The city has a mild climate year-round with an average of 201 days above 70 °F and low rainfall (9–13 inches annually). San Diego falls into Sunset's1 zones 23 (inland foothills and valleys) and 24 (coast, with marine influence).

Like most of southern California, the majority of San Diego's current area was originally occupied by chaparral, a plant community made up mostly of drought-resistant shrubs. The steep and varied topography and proximity to the ocean create a number of different

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1 Brenzel, Kathleen Norris. *The New Sunset Western Garden Book.* New York, NY. Time Home Entertainment Inc., 2012. Also described at http://www.sunset.com/garden/climate-zones/sunset-climate-zone-san-diego-area

habitats within the city limits, including tidal marsh and canyons. Trees grow in the riparian area along streams, and native oaks on the slopes.

Trees native to many other places can thrive in San Diego's urban environment. The urban soil is often a mixture of disturbed soils and sometimes construction debris. Frequently, trees have restricted rooting space, often constrained by concrete or asphalt and overhead utility lines. Imported water and recent drought conditions favor trees with low water requirements.

Why We Need a Plan
Over the past five decades, urban forestry has evolved as researchers and practitioners draw upon longstanding arboriculture practices and learn more about their unique role in providing environmental, economic, and social benefits to urban areas. To realize these benefits, a comprehensive vision is needed for the care and management of the city's trees, and an implementation schedule to secure the resources.

An urban forest management plan is a planning process, with a number of steps to gather, analyze, and act on information. The tree inventory consists of information gathered about specific trees or estimated from aerial images, which is then analyzed and evaluated to describe the current state of the urban forest. Management goals are set for the urban forest resources and program, including goals for services provided to city residents, percent canopy cover of the urban trees, mix of species by age and location, regulations governing tree cover and care, and technical oversight. The resources and actions to achieve these goals are outlined in this Urban Forest Management Plan, and the completion of these actions will result in the desired condition of the future urban forest.

Benefits Provided by Trees
San Diegans' quality of life depend on the urban forest, as trees make a vital and affordable contribution to sense of community, walkable neighborhoods, energy savings, air quality, and more. The urban forestry program is critical to meeting the City's commitment to climate change, carbon sequestration, stormwater reduction, and water conservation. Trees are one of the few infrastructure investments that grow in value with time.

A recent review of benefits of trees and urban forests was completed by the Alliance for Community Trees,[2] which cited 122 references. More information about the benefits of trees, links to the latest research papers, and other research can be found at the Invest From the Ground Up resource.[3] These benefits include:

> **Energy Conservation.** Trees conserve energy by shading buildings and reducing energy costs. Trees lower local air temperatures by shading concrete surfaces and

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[2] Alliance for Community Trees. 2011. Benefits of trees and urban forests: A research list. Unpublished white paper, 19 pp. Available at http://www.actrees.org/files/Research/benefits_of_trees.pdf
[3] Invest from the Ground Up, http://investfromthegroundup.org/resources/research/

evaporating water from their leaves.   (Buildings and concrete surfaces absorb more energy from the sun, warming the air around them and making cities warmer than rural areas. This is called the "urban heat island" effect.)

Air Quality and Carbon Dioxide Reduction. Trees absorb air pollutants into their leaves, clean the air, and lower asthma risks. Trees use carbon dioxide when they grow, and sequester this carbon in the wood.   The energy saved by trees reduces demand for power, and lowers the carbon dioxide emissions from power plants.

Soil and Water. During a storm, water soaks into the ground around trees, instead of flooding the streets and running into the storm drains. Tree roots hold soil in place, reducing erosion.

Wildlife Habitat. Trees and provide shelter and food for many birds and small animals.

Health Benefits. Families enjoy parks and recreation areas with trees, especially those close to home. Children are healthier, happier and smarter when they get time for unstructured outdoor play every day. Trees have a calming and healing effect on people with Attention Deficit Disorder.

Community Benefits. Rows of trees reflect and absorb sound energy, so neighborhoods are quieter. Property values of houses with trees are usually higher than those without trees. Shoppers linger longer and spend more in stores, on streets with shade trees. Planting and caring for trees teaches residents that they can work together to improve their neighborhoods.

Scope of the Plan

Planning Horizon
The scope of this plan is a 20-year planning horizon with the expectation of review every five years. This plan assesses the city's street trees, park trees, and trees in open space areas.

Relationship to Other Planning Documents
The City of San Diego policies, council resolutions, ordinances, and planning documents establish a framework for developing and managing the city's urban forest. The recent economic challenges and fiscal budgeting have curtailed their implementation, resulting in a depleted urban forest canopy. The city's documents and publications range from the guiding General Plan to the specific recommendations of individual tree species in the Street Tree Selection Guide.

The Community Forest Advisory Board (CFAB) provides oversight for these policies and programs, meeting the second Wednesday of every month.[4] Board responsibilities

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4 Community Forest Advisory Board information at
http://www.sandiego.gov/economic-development/about/cfab.shtml

include preparing a comprehensive urban forestry master plan and tree inventory; reviewing and recommending necessary revisions to urban forestry-related policies and programs; networking with other boards, agencies and community residents; sharing information and promoting volunteerism; reviewing the implementation and compliance with urban forestry policies and programs; seeking funding for the establishment and maintenance of an urban forestry program; and promoting and fostering a strong sense of community through urban forestry.

The following are existing policies and regulations with a description of how they relate to urban forestry activities in San Diego.

City of San Diego's General Plan. The Plan's Conservation Element, Section J. Urban Forestry, provides the most in-depth description and discussion of urban forestry and identifies the benefits of and policies relating to trees.[5]

City of San Diego Climate Action Plan. The December 2013 draft calls for increasing urban tree coverage by 15 percent by 2020 and by 25 percent by 2035. It also specifies completing an urban tree canopy assessment, implementing the urban forest management plan, and hiring an urban forest manager.[6]

Municipal Code Article 2: General Regulations, Division 6: Street Planting; and Division 4: Landscape Regulations.[7] These regulations establish rules and regulation to control and protect planting on city streets.

Council Policy 200-05, Planting of Trees on City Streets, effective November 15, 1993. This policy establishes guidelines for the planting and removal of trees from City street rights-of-way. [8] The Park and Recreation department has authorized Development Services to issue permits. The permit is the No Fee Permit, required for all street tree planting, pruning, and removal.

Council Policy 900-19, Public Tree Protection, effective June 13, 2005. This policy protects designated trees.[9] There are categories for requests for protection, and there are stated penalties for unauthorized removals.

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5 City of San Diego General Plan 2008,
http://www.sandiego.gov/planning/genplan/pdf/generalplan/fullversion.pdf
6 City of San Diego Climate Action Plan 2013,
http://www.sandiego.gov/planning/genplan/cap/pdf/draft_climate_action_plan_dec_2013.pdf
7 Municipal Code Article 2: General Regulations, Division 4, posted at
http://docs.sandiego.gov/municode/MuniCodeChapter14/Ch14Art02Division04.pdf and Division 6, posted at http://docs.sandiego.gov/municode/MuniCodeChapter14/Ch14Art02Division06.pdf
8 Council Policy 200-05, posted at http://docs.sandiego.gov/councilpolicies/cpd_200-05.pdf
9 Council Policy 900-19, posted at http://docs.sandiego.gov/councilpolicies/cpd_900-19.pdf

Council Policy 100-21, Funding for Maintenance Assessment Districts, effective September 7, 2004.10 This document sets criteria for establishing new maintenance assessment districts and funds landscape maintenance within the districts.

Street Tree Selection Guide. This document lists trees suitable for planting as street trees. It was reviewed by 20 local tree professionals in fall 2014, and the proposed revised list is provided as Appendix A.

Multiple Species Conservation Plan (MSCP).11 The MSCP involves a regional effort to preserve a network of habitat and open space, protecting biodiversity and enhancing the region's quality of life. San Diego is one of several jurisdictions participating in the MSCP. The city's MSCP includes agreements with state and federal wildlife agencies. This document overrides other city regulations.

Landscape Standards of the Land Development Manual.12 This document establishes the minimum plant material, irrigation, brush management, and landscape-related standards for work done in accordance with requirements of the Land Development Code. Development Services is currently evaluating the street tree criteria in this document with an eye toward expanding the urban forest.

Clarification of Brush Management Regulations and Landscape Standards.13 This document pertains to development within the wildland/urban interface. It describes brush management and fire protection requirements including thinning and pruning of vegetation. It provides specific horizontal and vertical distance requirements for trees and shrubs. Indigenous, native trees are exempt. The Fire Prevention Bureau does not require permits, but does require a brush management plan and program to be processed for any development. The Fire-Rescue Department issues notices of violation for noncomplying properties.

Pedestrian Master Plan. Developed in 2006, this plan promotes the contribution of shade trees in enhancing the pedestrian experience, protecting walkers from the elements, providing visual interest, increasing safety from passing traffic, and buffering adjacent uses. [14]

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10 Council Policy 100-21, Funding for Maintenance Assessment Districts, posted at
http://docs.sandiego.gov/municode/MuniCodeChapter14/Ch14Art02Division06.pdf
11 City of San Diego. 1997. Multiple Species Conservation Program: City of San Diego MSCP Subarea Plan.
175 pp. Available at http://www.sandiego.gov/planning/programs/mscp/pdf/subareafullversion.pdf
12 Landscape Standards of the Land Development Manual, posted at
http://www.sandiego.gov/development-services/pdf/industry/standards09.pdf
13 Clarification of Brush Management Regulations and Landscape Standards, posted at
http://www.sandiego.gov/fire/pdf/brushpolicy.pdf
14 City of San Diego. 2006. Pedestrian Master Plan, posted at
http://www.sandiego.gov/planning/programs/transportation/pdf/pmpfv.pdf

Community Plans.[15] There are 52 community planning areas that comprise the city, each with a community plan. Some of the plans have Street Tree Master lists. The Planning Department refers to the Street Tree Selection Guide for those plans without tree lists, and when community plans are updated, the department includes street tree plans.

Status of San Diego's Urban Forest

Tree Resource Assessment
Canopy Cover
Tree canopy is an important measure of the urban forest resource. The urban tree canopy is the layer of leaves, branches, and stems of trees that cover the ground when viewed from above. Estimates of San Diego's tree cover vary based on image type, resolution, and type of study/author. American Forests[16] conducted a study of Landsat imagery for San Diego comparing 30-meter (m) resolution data from 1986 and 2002. Tree cover was estimated at 7 percent with this data. The study concluded that the San Diego study area lost significant tree cover over the last two decades (a 29 percent decline between 1985-2002) while the urban areas have increased 41 percent.

In a national study by the USDA Forest Service, tree canopy and impervious surface cover were estimated from maps at 30 m resolution from 2001 Landsat satellite imagery and published in 2007[17] in conjunction with 1990 and 2000 census and geographic data (1:5,000,000 scale cartographic boundary files) to assess current urban and community forest attributes. This analysis of Landsat imagery showed that San Diego's tree cover is about 4.2 percent.[18]

The City submitted a concept application to the California Department of Forestry and Fire Protection (CalFire) in November 2014, which would enable the city to obtain an up-to-date urban tree canopy assessment . This will enable the city to have a baseline of the status of the current urban tree canopy and to set tree future tree planting goals.

Street Trees
Trees along streets have a greater effect on most citizens than do trees in all other public areas. People spend more time traveling along tree-lined streets than they spend on other public property. An estimated 250,000 trees line San Diego's streets. These trees range in

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15 Community planning is outlined at Community Planning, outlined at
http://www.sandiego.gov/planning/community/
[15] City of San Diego. 1989. Balboa Park Master Plan. 183 p. Available
16 American Forests. 2003. Urban ecosystems analysis, San Diego, CA. 20 p. Available at
http://www.ufei.org/files/pubs/sandiegouea.pdf, accessed 2/10/12 (move to first referral?)
17 Homer, C.; Dewitz, J.; Fry, J.; Coan, M.; Hossain, N.; Larson, C.; Herold, N.; McKerrow, A.; VanDriel, J.N.; Wickham, J. 2007. Completion of the 2001 national land cover database for the coterminous United States. Photogrammetric Engineering and Remote Sensing. 73(4): 337-341. Cited in Nowak and Greenfield, 2010.
18 Nowak and Greenfield, 2010.

size from large eucalyptus to smaller trees such as crape myrtle. Each of these trees requires periodic maintenance throughout its life.

Many planting opportunities exist in the city, such as along underplanted arterials; in older, established neighborhood streets where trees may have been lost; in new, treeless neighborhoods; around schools; and in areas around freeway interchanges. The city has the option of replacing some of the non-productive and less beneficial trees with larger trees where there are large enough planting areas. Additionally, the city can look for opportunities to reduce hardscape and increase its canopy cover.

The most current tree inventory that the Streets Division uses was completed in 2002. It includes all trees in public rights-of-way, but not those in assessment districts. This data was collected by interns and City employees in 2003. They walked the streets with GPS unit, identified trees and palms, recorded dbh for trees and height of brown trunk for palms, and marked vacant sites (no tree, in evident tree well or other planting location). This data is part of the "Street Tree Inventory" database and now part of the "Trees_SD" database at SANDAG.

Data was summarized by community planning area, for the number of street trees and palms, and then calculations made for percent of street trees planted, assuming that "full occupancy" would be one tree every 50 feet (on both sides of the street), or 200 trees per street mile. The tree and palm species were tabulated for each community planning area, and the most common 6-8 trees provided in Table 1. As summarized in Table 2, the tree inventory is dominated by six genuses: *Afrocarpus, Pinus, Platanus, Liquidambar, Jacaranda*, and *Eucalyptus.*

This database likely underestimates the number of trees in San Diego since it includes only street trees in areas where tree care management companies (contractors to the city) have pruned, planted, or otherwise treated a tree, entered information into their data base, and provided that data to the city. The database generally does not include trees in parks, residential, or commercial properties, although citizens can now add data directly into San Diego County Tree Map.[19] Embedded in the Tree Map software are functions to calculate the environmental benefits the trees provide: gallons of stormwater filtered, pounds of air pollutants captured, kilowatt-hours of energy conserved, and tons of carbon dioxide removed from the atmosphere.

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19 San Diego Tree Map, www.sandiegotreemap.org

Table 1: Total street trees and palms inventoried and calculation of planting percentages, City of San Diego, 2003

	# Street miles	Total trees	Total palms	Total = Trees + palms	Desired # trees (200/mi)	% trees planted (total/desired)
District 1	507	33,494	5,642	39,136	101,376	33%
District 2	422	20,692	17,429	38,121	84,316	25%
District 3	296	12,629	11,376	24,005	59,198	21%
District 4	312	15,883	2,743	18,626	62,360	25%
District 5	418	28,798	2,330	31,128	83,500	34%
District 6	407	18,939	3,066	11,505	81,320	23%
District 7	273	13,904	2,267	16,171	54,600	25%
District 8	282	15,266	3,752	19,018	56,410	27%
Sum all districts	2,915	159,605	48,605	197,710	583,080	27%

Table 2: Total street trees and palms inventoried and tabulation of most common trees in each community, City of San Diego, 2003

	1	2	3	4	5	6	7	8	All districts
Acacia	570								570
African fern pine	880	826	463	-	1,035	95	-	31	3,330
Ash	66	40	-	-	-	807	378	-	1,291
Bradford Pear	64				239			170	473
Brazilian pepper			560	313					873
Brisbane Box	874	409	406	369	1,810	1,525	506	149	6,048
Calif. pepper	52	67	-	491	-	-	-	-	610
Calif. Sycamore	2,363							656	3,019
Camphor	414								414
Coral Tree		26	-	-	-	-	-	-	26
Carob		459	-	-	-	-	-	-	459
Carrot wood	1,157	1,793	1,446	1,479	1,852	2,263	1,089	1,410	12,489
Chinese Flame	340	39	237	-	316	310	-	-	1,242
Crape Myrtle			134					13	147
Eucalyptus	2,097	502	194	473	3,561	1,793	1,168	-	9,788
Ficus		19	-	-	-	-	99	221	339
Fig	96	52	-	-	-	177	-	-	325
Italian Cypress	340			1,639				35	2,014
Jacaranda	323	2,529	1,223	868	289		134	672	6,038
Juniper		183	-	-	-	1,028	-	781	1,992
London plane	294	31	-	-	270	-	-	-	595
Magnolia		240	-	-	128	-	-	-	368
Melaleuca	450	803	-	-	220	209	-	-	1,682
Myoporum	641					-		33	674
New Zealand Christmas Tree	209	51	-	-	-		-	266	526
Oleander	346	161	-	-	-	-	-	-	507
Olive		17	-	-	-	-	-	-	17
Poplar	388					-		-	388
Pine	3,622	1,025	-	867	3,708		492	13	9,727
Siberian Elm		203	-	-	-	450	-	761	1,414
Sweet Gum	2,677	1,524	798	-	166	-	1,012	-	6,177
Torre Pine	168					1,048		89	1,305
Victorian Box								39	39
White Alder								328	328
Tipu								223	223
Yucca		10	-	438	-		-	359	807
	18,431	11,009	5,461	6,937	13,594	9,705	4,878	6,249	76,264

Park and Open Space Trees
The City of San Diego oversees nearly 40,000 acres of developed and undeveloped open space; more than 340 parks including Balboa Park, Mission Trails Regional Park, and Mission Bay Park; and 25 miles of shoreline from Sunset Cliffs to La Jolla. The trees in San Diego's parks are not part of the current street tree inventory.

For many communities the canyons located throughout San Diego are all that remain as undeveloped natural landscape. Canyons provide the citizens of San Diego with such benefits as scenic vistas, preservation of natural resources, outdoor recreation, and other benefits to health and well-being.

Maintenance assessment districts are managed by the Park and Recreation Open Space Division. There are approximately 50 maintenance assessment districts throughout San Diego. Thirty percent of maintenance districts are business districts, which are under the purview of the Economic Development Department.

Tree Resource Management

Summary of Current Tree Management Practices/Programs
The success of an urban forestry program relies on the commitment of allied professionals, appointed and elected public officials, and the citizens and local businesses in the community. At the City staff level, the urban forestry programs are currently managed in four departments:
- Planning (community plan updates)
- Development Services (code compliance)
- Parks and Recreation (parks, open space, and Maintenance Assessment Districts)
- Economic Development Department (business districts)
- Transportation and Stormwater (street trees)

Issues and Trends
The following were identified as issues or trends to be addressed in the Urban Forest Management Plan (UFMP). They were derived from numerous interviews in spring and summer 2014 with city staff from the Streets Division, Open Space Division, Park and Recreation Department, Planning and Development Services, Transportation and Storm Water Department, Environmental Services, and members of the UFMP Working Group that included CFAB members, city staff, and citizens at large.

The following issues were identified:
> **Current and Future Tree Inventory.** There is no adequate inventory for park and open space trees. There are limited areas for increasing the urban tree canopy.

Tree Planting. Policies need to be implemented to ensure that appropriate species are planted. There is a need to have nurseries supply trees to the City that meet minimum standards. Invasive species should be addressed. There is concern about increased water consumption if more trees are planted.

Tree Care. Young trees need to be irrigated in the first years after planting. Maintenance is performed reactively. Drought and subsequent pests and diseases should be addressed proactively.

Other City Programs. A holistic approach to urban forestry is lacking.   Air quality, storm water, climate action, and carbon sequestration policies should employ urban trees to meet City goals. The Storm Water Division incorporates tree planting only for mitigation of low impact development projects. Policies need to incorporate the need to manage for wildlife habitat.

Enforcement. Currently, property owners face few consequences when they use bad pruning practices.   Lack of proactive enforcement of current tree-related regulations is an ongoing issue (code compliance). Vandalism is an issue in parks.

Education. Public and city staff education is needed, about the benefits of trees as well as planting the right plant in the right place.

Management. Additional staff are needed to better manage the urban forest. Mechanisms need to be implemented for identifying issues in the field. Risk should be managed proactively. Some policies and department priorities may contradict each another. The urban forest is not always viewed as a resource, A stable source of funding is needed to manage and maintain safe trees.

Community Values
Summary of Local Concerns/Issues

Citizen support plays a vital role in supporting urban forestry. Tree-related advocacy groups are now common in many cities. They marshal volunteer support and voice support for urban forestry programs to local officials. Tree-planting volunteers join professional arborists on the front lines. More importantly, citizens can provide the political support to sustain public investment in green infrastructure and the urban forest. Effective urban forestry depends ultimately on the public policy supporting it—financially, administratively, and legally.

Presentations about urban trees and the Urban Forest Management Plan were given to 40 community planning groups, business improvement districts, and other community groups from May to September 2014. Each attendee was invited to provide input on community forestry benefits and issues in their community. Table 3 summarizes the responses to four of the questions, from 487 attendees at the presentations and 220 who completed the online survey, for a total of 707 respondents.

Table 3. Summary of responses from community groups

	# responses	% total
Question 1: What are the three (3) most important benefits of trees?		
a. Clean the air by absorbing pollutants	349	49%
b. Create more pleasant neighborhoods and business districts	369	52%
c. Increase property values	78	11%
d. Provide food and shelter for wildlife	194	27%
e. Reduce greenhouse gases, summer temperatures and address climate change	324	46%
f. Shade buildings and lower energy bills	199	28%
g. Shade streets for walking and parks for playing	252	36%
h. Stabilize soil and reduce storm water runoff	175	25%
i. Other	19	3%

Question 2 = In your neighborhood, are there are too many or too few public trees?

Too few trees	484	68%
Too many trees	15	2%
Enough trees	172	24%

Question 4: What are your top two (2) concerns relating to tree planting and care?

a. Sidewalks and pavement cracking	52%	53%
b. Leaves and fruit dropping/ongoing maintenance	29%	29%
c. Tree roots and underground pipe problems (similar to A-sidewalks-pavement)	26%	28%
d. Blocking traffic, sidewalks, signs, and/or street lights	16%	16%
e. Creating safety problems from trees and limbs falling	11%	9%
f. Attracting bugs and other pests	3%	3%
g. Trees cost too much money	5%	5%
Other: Watering and water costs	6%	6%
Other: Maintenance, trimming, and pruning	3%	3%
Other: Fire hazards	2%	2%
Other (not identified)	14%	12%

Question 5: What are you willing to do to ensure San Diego's trees are maintained and protected for future generations?

a. Support new legislation or rules about planting and tree protection	338	52%
b. Plant new trees on my property when trees die or need to be removed	354	54%
c. Increase the City's budget for tree planting and maintenance	318	49%
d. Volunteer to plant and maintain trees on public property	223	34%
e. Support a 1% fee or tax, dedicated to tree care and maintenance	182	28%
f. Other (none)	65	10%

Local residents considered four benefits of trees as the most important: clean the air, create more pleasant neighborhoods and business districts, reduce greenhouse gases

and address climate change, and shade streets. Two-third believed there are too few public trees in their neighborhoods. The top concerns about tree planting and care were sidewalks and pavement cracking, and leaves and fruit dropping. Water was unintentionally not listed as a separate choice, but it was the most mentioned concern for "other concerns." About half said they would support each of the following actions: support new legislation or rules about planting and tree protection; plant new trees on their property when trees die or need to be removed; and increase the City's budget for tree planting and maintenance.

Goals, Objectives, and Actions

The Conservation Element of the 2008 General Plan includes CE-J.1 to CE.J.5 Urban Forestry, with the overall goal of "protection and expansion of a sustainable urban forest." There are five policies in that element, and they drive the following objectives and actions in this Urban Forest Management Plan. There are also policies relating to urban forestry in other sections of the Conservation Element (Climate change and sustainable development, water resource management, and air quality), Historic Preservation, and Urban Design elements. Those policies are incorporated into the five policies of CE-J.1 to CE-J.5

CE-J.1. Develop, nurture, and protect a sustainable urban/community forest.
   a. Seek resources and take actions needed to plant, care for, and protect trees in the public rights-of-way and parks and those of significant importance in our communities.
   b. Plant large canopy shade trees, where appropriate and with consideration of habitat and water conservation goals to maximize environmental benefits.
   c. Seek to retain significant and mature trees.
   d. Provide forest linkages to connect and enhance public parks, plazas, and recreation and open space areas.
[Objectives listed immediately under the goals CE-J.1 through CE-J.5 are from the 2008 General Plan]

CE-J.1. Objectives:
1. *Inventory all public trees and update the tree inventory every seven years.*
   a. Establish inventory of public trees.
   b. Record all permits and completed maintenance work in the inventory.
   c.   Identify designated and potential heritage trees in the inventory.
   d. Develop an urban tree canopy cover assessment using LIDAR remotely sensed data.
      CE-J.1.1 Actions – Inventory and Inventory Update
         1. Urban Forest Manager will prepare the scope for the inventory to include the identification of landmark trees and potential planting sites.

2. Urban Forest Manager will ensure that the new inventory is completed and accurate.
3. Urban Forest Manager will administer the inventory contract. The Streets and Open Space and Park divisions will require all contractors doing tree work in the city to update work records in the city's tree inventory database. It should be clear in the contract that payment for services rendered will not be issued until work records and inventory update are completed.
4. The city will make available electronic tablets to employees to update the inventory.
5. Each employee will be required to complete work orders that update the current tree inventory each time a tree is planted, trimmed, removed, or serviced in anyway, such as hardscape repairs.
6. The Development Services Department will update the inventory database when tree permits are issued.
7. Every seven years, Urban Forest Manager will request funding and/or seek grant opportunities to completely re-inventory the city.

2. *Increase canopy cover (land area covered by trees) to optimize public benefits.*
   a. Obtain a canopy cover assessment using LIDAR remote sensing.
   b. Develop a citywide tree canopy optimum target consistent with the Climate Action Plan canopy cover goal.
   c. Establish canopy cover goals for each community.
   d. Develop a long-term tree-planting program for achieving established canopy goals.
   e. Plant trees that maximize public health benefits, carbon sequestration, air quality, energy reduction, water conservation, storm water retention, ground water recharge, wildlife habitat including those for urban birds, and other benefits.
   f. Encourage the planting of large canopy trees to maximize environmental benefits.
   g. Identify potential planting sites on public lands.
   h. Encourage the planting of trees on private properties.
   i. Reduce the urban heat island through actions such as planting trees and other vegetation to produce shade.
   j. Develop greening plans.

   CE-J.1.2 Actions – Canopy Cover Assessment and Goals
   1. Urban Forest Manager will work with canopy assessment experts to complete a LIDAR remote sensing canopy assessment of the entire city.
   2. Planning Department together with Urban Forest Manager will work with each community to set canopy cover goals to be completed within 12 months of completing the canopy cover assessment.
   3. Using the vacant planting sites as identified in the tree inventory, Urban Forest Manager will develop a 20-year planting plan to achieve the identified canopy cover goals using primarily large, broad-leaf, evergreen trees.

4. Urban Forest Manager together with the Streets and Open Space and Park divisions will begin to address the tree-planting goal in the Draft Climate Action Plan by annually increasing the tree population in areas identified as lacking in trees while the long-term plan is being developed.
5. The city's Streets and Open Space and Park divisions will begin planting trees using a combination of volunteers, city staff, and contract services.
6. Urban Forest Manager through the public outreach/educational program identified in CE-J.5 will encourage tree planting on private property.

3. ***Develop a master tree-planting plan that encourages optimal age and species diversity.***
   a. Plant a variety of species to create a more resilient urban forest.
   b. Plan for age diversity, pest susceptibility, and species diversity (no more than 10 percent of any one genus and no more than 2.5 percent of any one species within a genus).
   c. Review and update at least every five years, the city's approved Street Tree Selection Guide based on collaboration with and knowledge of local tree care professionals. Document reasons for removal/additions of a species from the list.
   d. Encourage where appropriate, the use of native, noninvasive, and water efficient species and collaborate with nursery owners on species selection.
   e. Incorporate trees and other green infrastructure as assets that are measurable in economic benefits.
   f. Include evergreen species to maximize stormwater retention.
      CE-J.1.3 Actions – Diversity and Street Tree List
      1. Urban Forest Manager through an analysis of the city's tree inventory will develop a master tree-planting plan that encourages an optimal level of age and species diversity and the use of native, noninvasive, and water-efficient species. The approved street tree list will be used for this master tree-planting plan.
      2. Urban Forest Manager will develop and/or revise this master tree-planting plan in conjunction with the community plan updates that are scheduled and managed through the Planning Department.
      3. Urban Forest Manager will review the community plans updated in the last five years to assess whether each urban forest element is consistent with this master tree-planting plan and recommend revisions.

4. ***Improve tree-planting success.***
   a. Review and revise tree planting specifications and guidelines and incorporate physical protections for young trees.
   b. Improve tree stock selection and purchase through qualified inspectors that follow city specifications and guidelines.
   c. Check and monitor planting sites for compliance.
      CE-J.1.4 Actions – Planting Success
      1. Urban Forest Manager together with the Horticulturalist and Open Space and Park mangers will review and modify, if needed, specifications and

guidelines for the purchase and selection of street tree stock for planting in the city public rights-of-way. These will be completed and sent to all department managers purchasing trees and nursery vendors providing city trees.

2. The Horticulturalist and Open Space and Park managers will begin spot-checking purchases for compliance.
3. Urban Forest Manager together with the Horticulturalist and Open Space and Park managers will review and modify, if needed, specifications and guidelines for the planting of street trees in the city public rights-of-way. This will be completed and sent to all department managers and contractors providing tree-planting services.
4. The Horticulturalist and Open Space and Park managers will begin spot-checking newly planted trees for compliance.

5. ***Improve care and maintenance of street trees through a comprehensive management program addressing newly planted trees, mature, and large trees.***
   a. Implement best management practices (BMPs) policy for all tree care activities and contract work, following International Society of Arboriculture (ISA) and American National Standards Institute (ANSI) standards.
   b. Implement young tree maintenance program that includes tree protection, watering, structural pruning, stake removal, and six-month inspections for two years.
   c. Prune trees on a regular schedule to maintain tree health, reduce risk of failure, provide clearance, and improve aesthetics.
   d. Establish a maintenance program for mature and large trees, including regular inspections and minimal pruning.
   e. Identify current and potential pests and diseases.
   f. Ensure that tree care relating to insect and disease problems follow integrated pest management practices (IPM).
   g. Develop management program for the preservation of heritage trees.
   h. Ensure proper maintenance throughout the life of the tree.
   CE-J.1.5 Actions – Implement BMPs
      1. Urban Forester Manager together with the Horticulturalist and Open Space and Park managers will develop polices for the maintenance of all trees based on ISA and ANSI 300 standards. Staff and contractors will follow these approved BMPs in their daily activities.
   CE-J.1.5 Actions – Implement Young Tree Care Program
      2. Urban Forest Manager together with the Horticulturalist and Open Space and Park managers will develop a young tree maintenance program that includes watering, structural pruning, stake removal, and regular inspections.
      3. The Streets Division will be responsible for watering trees planted for the first three years.
      4. A supplemental watering program using contract services is to commence at the same time as the tree-planting program begins.

5. Residents receiving trees will be given a guide to watering and general care at the time of planting.
6. Young trees require structural pruning twice within the first four years. The first pruning should take place when the tree is planted and the second pruning at four years of age.
7. A drive-by visual inspection is needed every six months for the first two years to identify and address any cultural needs.
8. Stakes and ties will be checked during these visual inspections and removed when the tree is strong enough to stand on its own.

CE-J.1.5 Actions – Implement Mature Tree Care Program
9. Urban Forest Manager together with the Horticulturalist and Open Space and Park managers will develop adult and mature tree care programs for each area of responsibility. The programs for parks, open space areas, and streets will be different because of location and management responsibilities.
10. Before this is completed, Streets Division staff will request funding and begin a program of trimming street trees based on a frequency of once every seven years. The trees to be trimmed in this program will be prioritized by staff based on need.
11. After a detailed inventory of the City is completed and a master plan developed, a more balanced trimming program can be developed.

CE-J.1.5 Actions – Develop Heritage Tree Program
12. Urban Forest Manager will review and make changes to the Historic Tree Program to make it effective and relevant. Urban Forest Manager together with the Horticulturalist will evaluate all new trees identified in the inventory project (outlined in actions for objective CE-J.1.1) as potential candidates for the Heritage Tree Program.
13. Candidates identified for the heritage program will be combined with the current identified landmark, heritage, grove, and parkway resource trees.
14. Urban Forest Manager will guide revised program with the identified list of trees through the approval process.

6. ***Improve care of public trees through a comprehensive water management program addressing newly planted trees, mature, and large trees.***
   a. Review current programs, practices, and procedures, including the City of San Diego's Water Implementation Task Force report, that address drought and the need to water trees to maximize environmental and social benefits of trees.
   b. Develop and implement a variety of programs that will ensure adequate water for all of San Diego's urban forest.

   CE-J-6 Actions
   1. The Horticulturalist and Open Space and Park managers will use a diverse watering program for newly planted trees that encourages property owners to water trees and makes uses of tree water bags and volunteer and contract services.

2. The Horticulturalist and Open Space and Park managers will identify water-stressed public trees and use identified methods to provide supplemental water to these trees.
3. The Urban Forest Manager together with the Public Information Officer will develop and implement a public information strategy to encourage property owners to water drought-stressed mature trees.

7. ***Develop a tree removal and replacement program to address aging, diseased, poor-structured, and problem trees.***
    a. Use these removals to implement age and species diversity, and street tree master plans (in community plans).
    b. Replace all dead or removed trees on a 2:1 basis.
    CE-J.1.6 Actions
        1. Urban Forest Manager together with the Horticulturalist and Open Space and Park managers will develop a 20-year tree removal and replacement program for each area of responsibility based on current inventory data and historical knowledge.
        2. Staff is to identify trees that have reached their live expectancy, trees that continue to cause infrastructure damage because they are the wrong trees for their locations, trees that are dying from known insects or diseases, trees that are poor street tree candidates because of structure or growth pattern, and invasive tree species.
        3. Urban Forest Manager together with the Horticulturalist and Open Space and Park managers will identify and prioritize the problem trees and areas.
        4. Urban Forest Manager together with the Horticulturalist and Open Space and Park managers will detail implementation of the program for each area and request budgets for removal and then replant two trees for everyone removed.
        5. Urban Forest Manager together with the Horticulturalist and Open Space and Park managers will implement their individual programs per duties with the Urban Forest Manager providing oversight and coordination if needed.

8. ***Identify funding sources for planting, care, maintenance, and protection of trees in the public rights-of-way, parks, and trees of significant importance.***
    a. Adequately fund the Streets Division as the primary maintenance provider of all trees in public rights-of-way.
    b. Secure dedicated funding for tree planting, establishment and maintenance of all public trees.
    c. Develop and implement a plan to capture all funding opportunities to meet these goals.
    d. Investigate incentive opportunities for property owners to care for city trees.
    e. Consider establishment of additional maintenance assessment districts.
    CE-J.1.7 Actions

1. With the Urban Forest Manager taking the lead, Streets and Open Space and Park managers will strategize and develop funding sources and opportunities for generating revenue to cover the costs for the planting, care, and protection of the city's urban forest.
2. Urban Forest Manager to establish annual revenue resource goals with the ultimate goal of providing sustainable funding for San Diego's urban forest. Funding sources may include additional maintenance assessment districts, capital improvement funds, and state grants.

9. ***Review, revise and/or write policies that address green and gray infrastructure conflicts.***
   a. Use emerging technologies in soil science and pavement engineering to reduce hardscape repairs and tree removals.
   b. Develop a policy to minimize conflicts between tree roots and water and sewer lines.
   c. Develop a policy to minimize impacts of tree roots on curbs, gutters, and sidewalks.
   d. Develop a policy to minimize tree canopy conflicts with power lines.
   e. Implement a tree root management program to address root conflicts.
      CE-J.1.8 Actions
      1. Urban Forest Manager to review and revise with each impacted department, practices and policies that address green infrastructure conflicts, i.e., water and sewer lines, overhead wires, curbs, gutters, and sidewalks.
      2. Urban Forest Manager to review the current sidewalk improvement project with the Street Division Managers to ensure that BMPs are followed to preserve and protect existing trees.
      3. Urban Forest Manager to work with all departments impacted by these potential conflicts to develop new policies and procedures where needed to ensure a strong and viable urban forest with minimal loss of trees due to these conflicts.
      4. Urban Forest Manager to take these revised policies for review and approval by all impacted city departments, appropriate boards and commissions, and the city council.
      5. The appropriate departments will submit new budget requests resulting from these new policies.

10. ***Ensure that tree care relating to insect and disease problems shall follow integrated pest management practices (IPM).***
    a. Identify current and potential pests and diseases.
    b. Develop a program for addressing these based on IPM.
       CE-J.1.9 Actions
       1. Urban Forest Manager together with the Horticulturalist and Open Space and Park managers will identify current and potential pest and disease problems that have the potential to negatively impact San Diego's urban forest.

2. Urban Forest Manager will develop in conjunction with other departments an IPM program that will address current and future insect and disease problems in an environmentally responsible way.
   3. Any additional budgetary requests to cover the cost of this program will be submitted by each impacted department.

11. ***Develop a biomass reuse program for the city's green trimmings and removals.***
    a. Identify current biomass reuse programs in the city.
    b. Identify potential biomass reuse programs for the city.
    c. Develop a biomass reuse program based on the above information that focuses on highest and best use of the material.
    d. Require all city staff and contractors to follow the established program.
       CE-J.1.10 Actions
       1. Urban Forest Manager will identify and assess the current biomass reuse program and make recommended changes to focus on the highest and best use of the material.

CE-J.2. Include community street tree master plans in community plans.
   a. Prioritize community streets for tree planting.
   b. Identify the types of trees proposed for those priority streets by species (with acceptable alternatives) or by design form.
   c. Integrate known protected trees to glossary trees and inventory other trees that may be eligible to be designated as a protected tree.
   d. Review current urban greening plans that are in use.

CE-J.2 **Objectives**:
1. ***Review street tree plans and urban forest elements to optimize benefits to the community.***
   Actions CE-J.2.1
   1. Urban Forest Manager will review community specific street tree plans and urban forest elements as part of the Community Plan Update process to provide guidance to optimize tree benefits prior to Community Plan adoption.
   2. Planning Department will include the need to update the urban forestry element as an important factor to consider when prioritizing Community Plan Updates.

2. ***Prioritize community areas for public tree planting programs.***
   a. Identify primary and secondary streets for developing and implementing the urban forest elements in the approved community master plans.
   b. Prioritize streets for tree planting based on need for improvement, number of vacant planting sites, existing species, and the condition of trees designated in the approved community plan.
   c. Incorporate trees for noise attenuation in street plans.

d. Identify and plant trees that complement and expand on the surrounding street trees.
e. Unify communities by using street trees to link residential areas.
f. Integrate street trees when planning and retrofitting roadways consistent with complete streets concepts.

Actions CE-J.2.2
1. Urban Forest Manager and Planning staff are to base prioritization on need for improvement, number of vacant planting sites, existing species, tree condition and species of trees designated in the approved Community Master Plan. Include these priorities in CE-J-1.5.
2. In addition to priorities established in the Community Plan process, Urban Forest Manager will work with the Horticulturalist and Open Space and Park managers to prioritize streets for urban forestry improvements.
3. Urban Forest Manager together with the Horticulturalist and Open Space and Park managers will use these established priorities to implement the city's tree planting program.

3. ***Integrate known protected trees and inventory other trees that might be eligible to be designated as a protected tree in each community.***

Actions CE-J.2.3
1. Urban Forest Manager and Planning Department staff will integrate known protected trees and inventory other trees that might be eligible to be designated as a protected tree in each community as outlined in CE-J-1.1 and CE-J-2.1.

CE-J.3. Develop a citywide urban forest master tree-planting plan comprised of the community plan street tree master plans.

CE-J.3. **Objectives:**
1. ***Develop the Urban Forest Master Plan.***
Actions CE-J.3.1
1. Urban Forest Manager, while developing the urban forest element in each community plan, will formulate a master tree-planting plan based on the tree species chosen by each community.
2. This master tree-planting plan will be completed and approved as part of the process identified in CE-J.2.1.
3. Urban Forest Manager will also develop a master tree-planting plan for those communities without an urban forest element as outlined in CE-J.2.2.

2. ***Review plan and update as needed***.
Actions CE-J.3.2
1. Urban Forest Manager will review the urban forest master tree-planting plan and update as necessary.

CE-J.4. Continue to require the planting of trees through the development permit process.
   a. Consider tree planting as mitigation for air pollution, stormwater runoff, and other environmental impacts as appropriate.

CE-J.4. Objectives:
1. **Develop policies that encourage and incentivize developers, homeowners associations, and other organizations to adopt trees as green infrastructure assets.**
   a. Develop policies for tree preservation during construction.
   b. Encourage developers to incorporate existing trees and vegetation into building and site designs when redeveloping sites.
      Actions CE-J.4.1
      1. Urban Forest Manager together with city planners will review the current development policies and process to ensure that maximum benefit from street tree planting is reached.
      2. If the process needs revision or improvement, Urban Forest Manager and city staff will begin a process of revising the policies and procedures for implementing the city's urban forest element into the development process.
2. **Increase enforcement of the city's policies and regulations related to the urban forest and consider implementing fines**.
      Actions CE-J.4.2
      1. Urban Forest Manager together with Planning staff and Code Enforcement will develop an improved enforcement program that may include fines.

3. **Re-assess No Fee Permit Process for planting, trimming, removing, and replacing trees in public rights-of-way**.
      Actions CE-J.4.3
      1. Planning staff and Code Enforcement to review the No Fee Permit Process and revise, if needed.
4. **Comply with the Draft Climate Action Plan and use trees to shade paved areas, especially parking lots; and use trees and other landscaping to provide shade, screening, and filtering of storm water runoff in parking lots**.
      Actions CE-J.4.4
      1. Planning staff together with the Urban Forest Manager will review policies to ensure compliance with the Draft Climate Action Plan that requires an increase in tree canopy.
      2. Planning staff together with the Urban Forest Manager will comply with the Draft Climate Action Plan, request budgets, and implement tree plantings, tree care, and other programs.

5. **Implement programs that use tree planting, bio-swales, permeable pavement, and other green infrastructure activities to reduce stormwater runoff.**
      Actions CE-J-4.5

1. The Urban Forest Manager together with the Storm Water Division will investigate ways of using trees and other green infrastructure activities to reduce storm water runoff.

CE-J.5. Support outreach efforts to educate city staff, the business community, and the public on the environmental and economic benefits of trees.

CE-J.5. **Objectives**:

1. ***Partner with non-profits, academic institutions, and other community organizations***.
   a. Develop programs that involve student/youth groups in the planting, care, and protection of trees.
   b. Develop a program to provide training to landscape/design committees for homeowners associations and other community groups.
   Actions CE-J.5.1
      1. Urban Forest Manager together with the Streets Division and Open Space and Park managers will identify potential non-profit and other community organizations for partnerships that would enhance the city's urban forest.
      2. Urban Forest Manager and appropriate staff members will engage potential partners to discuss mutual interests and working relationships.
      3. Urban Forest Manager together with other city staff members will develop a program that provides opportunities for partnerships.
      4. Urban Forest Manager together with other city staff members will hold a partnership kick-off event in conjunction with "Make a Difference Day" in October.

2. ***Establish a community education outreach program and develop materials to increase public awareness about the value of trees and their benefits to public health and well-being***.
   a. Educate the public on street tree selection, proper tree care, watering, pruning, and pests and diseases.
   b. Make property owners aware of their responsibility regarding street trees.
   c. Identify potential economic benefits from planting trees and share this information with elected officials and business and community leaders.
   d. Assess current and future educational outreach programs that promote the benefits of the urban forest.
   Actions CE-J.5.2
      1. Urban Forest Manager together with the city Public Information Officer will assess the current educational outreach programs to determine their effectiveness.
      2. Urban Forest Manager together with the city Public Information Officer will develop new educational outreach programs that promote the benefits of trees.

3. Urban Forest Manager will compile a cost/benefit analysis using cutting-edge metrics of the city's urban forest.
4. Urban Forest Manager will identify the pubic health benefits derived from the city's urban forest.

3. ***Incorporate tree watering guidelines and information about water conservation to retain healthy urban trees on public and private properties***.
   Actions CE-J.5.3
   1. Urban Forest Manager together with the Public Information Officer will develop tree watering and conservation guidelines as part of their educational outreach program as outlined in CE-J.5.2.

Appendix A provides a schedule of actions, by staff area and Fiscal Year. Appendices B and C provide the recommended revised Street Tree Selection list.

Monitoring Plan

[section will be added in final draft]

Financing the Urban Forestry Program

Budget History
Street Trees. Information provided by the Transportation and Storm Water Department (Street Division) about urban forestry expenditures for street trees is displayed in Table 4. The following was provided by City staff, Department of Transportation and Storm Water, in mid-2012[20] in a request to the City for the budget relating to urban forestry in FY 2003 through 2012:

> After the Urban Forestry line item was eliminated from the budget document in FY 2010, City crews continued to respond to urgent tree requests including trimming trees for vehicular and pedestrian clearance, picking up fallen palm fronds, performing selective tree trimming, and evaluation of health and stability of trees as needed. In addition, staff continues to coordinate with Urban Corps on tree planting and issues permits for tree planting, trimming or removal in accordance with established City policies.

Parks. The Department of Park and Recreation has an annual budget of about $200,000 for tree management for these parks: Balboa Park, Mission Hills Park, Golden Hill Park, Morley Field, 28th Street Park, and Grape Street Park. No estimate is available for other City parks.

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[20] June 26, 2012 letter from Elsa Lopez, Senior Management Analyst, to Jake Banfield, member of the CFAB

Maintenance Assessment Districts (MADs). Tree management has shifted to MADs in many parts of the City.[21] MADs are authorized by the State of California through the "Landscaping and Lighting Act of 1972" and subsequent legislation. The City provides for MADs through provisions of the "San Diego Maintenance Assessment District Ordinance," and the City assesses properties based on the amount of benefit each property will receive.

Funds for the MADs in FY 2011 were $56,000 for tree planting and $1,030,000 for tree trimming and maintenance; in FY 2012, $131,000 for tree planting and $1,510,000 for tree trimming and maintenance; and in FY 2013, $142,000 planned for tree planting and $1,510,000 for tree trimming and maintenance.   Some of the funding has been allocated from the Gas Tax fund, which totaled $22 million to the City in 2013. Of this, $1,268,498 was allocated to MADs, and $774, 382 for street median maintenance program.

Financing Options

An analysis of financing options was recently completed for the City of San Francisco,[22] and some of the recommendations could be considered for the San Diego. They include:

- Pursue a program of moderate expansion, planting new street trees per year and replacement trees to keep pace with four percent annual mortality.

- Transfer the responsibility for sewer repair to owners. The evidence suggests that tree roots exploit existing sewer damage and are not the cause of sewer damage. Consequently, in most cities, property owners are responsible for repairs to leaky lateral sewers.

- Fund capital costs with outside sources, such as General Obligation bonds, state grants, capital improvement program funds and in kind contributions.

- Levy a special assessment or parcel tax to fund operations and maintenance (O&M) for the average parcel.

- Reduce the use of truck drivers by requiring that they accompany maintenance crews only when the additional labor is required (i.e. for emergencies or large tree removals), rather than for all maintenance.

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[21] Information and documents available at http://www.sandiego.gov/park-and-recreation/general-info/mads/index.shtml
[22] AECOM. 2012. Financing San Francisco's Urban Forest. Report to the City of San Francisco. 60 pp. Available at http://www.sf-planning.org/ftp/files/plans-and-programs/planning-for-the-city/urban-forest-plan/121029FINAL_REPORT_SF_Urban_Forest_Financing_Report.pdf

Table 1: Urban Forestry Activities for Street Trees ($1000)[23]

Budget Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2014
414	$284	$400	$100	$600	$150	$60	$200	$300	$0	$0	$257	$390	$400
Broadleaf Trimming	$252	$300	$100	$150	$600	$700	$300	$200	$0	$0	$0	$0	$0
Tree Planting	$207	$335	$335	$50	$50	$75	$75	$25	$25	$100	$50	$100	$100
Root Pruning and Barriers	$132	$150	$150	$327	$327	$207	$290	$0	$0	$0	$0	$0	$0
Tree Removal	$68	$50	$150	$250	$250	$104	$185	$0	$200	$0	$300	$0	$0
Total for Tree Management	$943	$1,235	$835	$1,377	$1,377	$1,146	$1,050	$525	$225	$100	$607	$550	$500
Weed Abatement	$70	$75	$75	$425	$425	$350	$390	$100	$300	$400	$400	$400	$400
Total including Weed Abatement [24]	$1,013	$1,310	$910	$1,802	$1,802	$1,496	$1,440	$625	$525	$500	$1,007	$950	$1,400
Sidewalk Repair Project Support *	$268	$262	$256	$250	$228	$207	$185	$0	$0	$450	$300	$0	$0
Total including Weed Abatement and Sidewalk Repair	$1,281	$1,572	$1,166	$2,052	$2,030	$1,703	$1,625	$625	$525	$950	$1,307	$950	$1,400
Salaries and miscellaneous**	$4,900	$4,024	$3,905	$3,500	$3,431	$3,218	$4,100	$0	$0	$0	$0	$0	$0
Street Sweeping	$0	$0	$3,700	$3,700	$3,700	$3,700	$0	$0	$0	$0	$0	$0	$0
Salaries, miscellaneous, and street sweeping	$4,900	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total	$6,181	$5,596	$8,771	$9,252	$9,161	$8,621	$5,725	$625	$525	$950	$1,307	$950	$1,400
Public Budget Request	$5,910	$5,596	$8,771	$8,293	$9,071	$8,621	$5,544	$0	$0	$0	$0	$0	$0

* Sidewalk repair includes root pruning, root barrier installation, unstable tree removal, stump grinding, and other as needed.
**Supporting street Division emergency services

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[23] Urban forestry line item in City budgets from 2003 to 2009, available at http://www.sandiego.gov/iba/reports/index.shtml
[24] Table provided in April 2012 by Hassan Yousef, listing broadleaf trimming, palm trimming, tree planting, root pruning/barriers, tree removal, and weed removal.

Appendix A: Objectives and Actions for FY 2016-2020

The following table outlines the recommended actions, by staff area and schedule, for the next five fiscal years.

Program Area	Action	Description	Urban Forest Manager	Planners	Horticulturalist (Streets)	Parks and Open Space	Code Enforcement	Public Information	CFAB		FY 2015 (May-June)	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	After FY 2020
Inventory	CE-J.1.1.1	Prepare and Administer RFP for inventory	U								X						
Inventory	CE-J.1.1.2	Ensure inventory is complete	U										X				
Inventory	CE-J.1.1.3	Establish inventory updating procedure for all tree work	U										X				
Inventory	CE-J.1.1.4	Purchase 10 electronic tablets											X				
Inventory	CE-J.1.1.5	Update inventory as work is performed										X	X	X	X	X	X
Inventory	CE-J.1.1.7	Request funding for inventory update as needed.	U														X
Canopy Cover	CE-J.1.2.1	Conduct and complete LIDAR canopy assessment	U									X					
Canopy Cover	CE-J.1.2.2	Set canopy goals for each community.	U						C				X				
Canopy Cover	CE-J.1.2.3	Develop 20-year planting plan using vacancies identified.	U										X				
Canopy Cover	CE-J.1.2.4	Address Climate Action Plan's tree planting goal and request funding.	U						X								
Canopy Cover	CE-J.1.2.5	Plant trees each year.			H	O &P						X	X	X	X	X	X
Canopy Cover	CE-J-1.2.5	Half time inspector for this program			I							X	X	X	X	X	X

Program Area	Action	Description	Urban Forest Manager	Planners	Horticulturalist (Streets)	Parks and Open Space	Code Enforcement	Public Information	CFAB	FY 2015 (May-June)	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	After FY 2020
Canopy Cover	CE-J.1.2.6	Encourage tree planting on private property through public education programs.	U										X			
Master Tree Plan	CE-J.1.3.1	Analyze inventory and develop master planting plan for age and species diversity	U										X			
Master Tree Plan	CE-J.1.3.2	Develop/revise master planting plan as community plan updates are scheduled and managed	U										X			
Master Tree Plan	CE-J.1.3.3	Review community plans for consistency with urban forest element and establish schedule for revising	U	P								X				
Master Tree Plan	CE-J.1.3.1	Develop species selection guide based on habitat and water conservation goals	U						C				X			
Tree Planting	CE-J.1.4.1	Review specifications for tree purchase and selection	U		H						X					
Tree Planting	CE-J.1.4.2	Spot-check purchases for compliance			H						X	X	X	X	X	X
Tree Planting	CE-J.1.4.3	Review specifications for tree planting	U		H						X					
Tree Planting	CE-J.1.4.4	Spot-check newly planted trees for compliance			H	O&P					X	X	X	X	X	X
Tree Care	CE-J.1.5.1	Develop policies for maintaining all trees based on ISA and ANSI 300 standards	U		H	O&P					X					
Tree Care	CE-J.1.5.1	Follow approved BMPs throughout daily activities			H	O&P					X	X	X	X	X	X

Program Area	Action	Description	Urban Forest Manager	Planners	Horticulturalist (Streets)	Parks and Open Space	Code Enforcement	Public Information	CFAB		FY 2015 (May-June)	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	After FY 2020
Tree Care	CE-J.1.5.2	Develop young tree maintenance program including watering, structural pruning, stake removal, and inspection	U		H	O&P						X					
Tree Care	CE-J.1.5.3	Supplemental water for trees planted			H	O&P						X	X	X			
Tree Care	CE-J.1.5.3	Supplemental Water for trees planted			H	O&P							X	X	X		
Tree Care	CE-J.1.5.3	Water trees planted			H	O&P								X	X	X	
Tree Care	CE-J.1.5.3	Water trees planted			H	O&P									X	X	X
Tree Care	CE-J.1.5.3	Water trees planted			H	O&P						X	X	X	X	X	X
Tree Care	CE-J.1.5.3	Water trees planted			H	O&P						X	X	X	X	X	X
Tree Care	CE-J.1.5.5	Distribute tree care and watering guide to residents who receive trees.			H							X	X	X	X	X	X
Tree Care	CE-J.1.5.6	Structurally prune young trees during first four years. First, at time of planting. Second, at four years.			H	O&P						X	X	X	X	X	X
Tree Care	CE-J.1.5.6	Structurally prune young trees again at four years.			H	O&P									X	X	X
Tree Care	CE-J.1.5.7	Perform windshield inspections of trees every six months in first year and address observed deficiencies/problems & stake removal.			H	O&P						X	X	X	X	X	X

Program Area	Action	Description	Urban Forest Manager	Planners	Horticulturalist (Streets)	Parks and Open Space	Code Enforcement	Public Information	CFAB		FY 2015 (May-June)	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	After FY 2020
Tree Care	CE-J.1.5.7/8	Perform windshield inspections of trees every six months in year two and address observed deficiencies/problems & stake removal.			H	O &P							X	X	X	X	X
Tree Care	CE-J.1.5.9	Develop adult and mature tree care program for each area of responsibility.	U		H	O &P								X			
Tree Care	CE-J.1.5.10	Trim 49,000 palms			H						X	X	X	X	X	X	X
Tree Care	CE-J.1.5.10	Request funding and begin seven-year street tree trimming cycle 24,000 shade trees ea yr.	U		H	O &P						X	X	X	X	X	X
Tree Care	CE-J.1.5.10	One half FTE Inspector for this program			I							X	X	X	X	X	X
Tree Care	CE-J.1.5.11	Develop balanced and revised tree trimming program based on completed inventory and master plan development. Tree trimming should be based on species needs rather than trimming cycle.	U		H	O &P								X			
Historic Trees	CE-J.1.5.12	Review and revise Historic Tree program for effectiveness and relevancy.	U											X			
Historic Trees	CE-J.1.5.13	Combine candidates for Historic Tree program with current landmark, heritage, grove, and parkway resource trees.	U												X		

Program Area	Action	Description	Urban Forest Manager	Planners	Horticulturalist (Streets)	Parks and Open Space	Code Enforcement	Public Information	CFAB		FY 2015 (May-June)	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	After FY 2020
Historic Trees	CE-J.1.5.14	Submit revised program to city council for approval.	U													X	
Watering	CE-J.1.6.1	Diverse watering program for newly planted trees.			H	O&P						X	X	X	X	X	X
Watering	CE-J-1.6.2	Supplemental water for established trees			H	O&P						X	X	X	X	X	X
Watering	CE-J-1.6.3	Public education program	U					PIO				X	X	X	X	X	X
Removal-Replacement	CE-J.1.7.1/2	Develop 20-year tree removal and replacement program for each area of responsibility based on current inventory and history.	U		H	O &P									X		
Removal-Replacement	CE-J.1.7.4	Detail each area for implementation of the program and submit budget requests.	U		H	O &P									X		
Removal-Replacement	CE-J.1.7.5	Oversee and coordinate program implementation, replacement of 500 trees within each department	U													X	X	X
Funding	CE-J.1.8.1/2	Strategize to develop funding sources for maintaining the urban forest, and establish annual revenue goals to ultimately provide sustainable funding.	U		H	O &P			C								X
Infrastructure	CE-J.1.9.1	Review practices and policies that address infrastructure conflicts with each affected department.	U													X		

Program Area	Action	Description	Urban Forest Manager	Planners	Horticulturalist (Streets)	Parks and Open Space	Code Enforcement	Public Information	CFAB		FY 2015 (May-June)	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	After FY 2020
Infrastructure	CE-J.1.9.2	Review current sidewalk improvement project for BMP and preservation and protection.	U		H						X	X	X	X	X	X	X
Infrastructure	CE-J.1.9.3	Work with all affected departments to develop new policies and procedures that ensure a viable urban forest with minimal losses.	U													X	
Infrastructure	CE-J.1.9.4	Obtain approval of these policies from all affected departments, appropriate boards and commissions, and city council.	U														X
Infrastructure	CE-J.1.9.5	Submit budget requests for these policies.			H	O&P					X	X	X	X	X	X	X
Pest Management	CE-J.1.10.1	Identify current and potential pest and disease problems in the urban forest.	U		H	O&P						X					
Pest Management	CE-J.1.10.2	Develop IPM program that addresses current and future pest and disease issues.	U		H	O&P							X				
Pest Management	CE-J.1.10.3	Submit budget requests to cover the cost of this program.			H	O&P								X			
Biomass Reuse	CE-J.1.11.1	Identify and assess current biomass reuse program and make recommendations focusing on highest and best use.	U														X

Program Area	Action	Description	Urban Forest Manager	Planners	Horticulturalist (Streets)	Parks and Open Space	Code Enforcement	Public Information	CFAB		FY 2015 (May-June)	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	After FY 2020
Community Plans	CE-J.2.1.1	Review community specific street tree plans and urban forest elements as part of the Commnity Plan Update process to provide guidance to optimize tree benfits.	U	P								X					
Community Plans	CE-J.2.1.2	Include the need to update the urban forestry element as an important factor to consider when prioritizing Community Plan Updates.		P									X				
Prioritize Planting	CE-J.2.2.1	Base prioritization on need for improvement, vacant planting sites, existing species, tree condition, and designations in Community Master Plan. Include in CE-J.1.5.	U	P									X				
Prioritize Planting	CE-J.2.2.2	Prioritize streets for urban forestry improvements. Complete 20 percent of streets each year.	U		H	O &P							X				
Prioritize Planting	CE-J.2.2.3	Use these priorities to implement city's tree planting program	U		H	O &P								X			
Protected Trees	CE-J.2.3.1	Identify and integrate trees to be protected as outlined in CE-J.1.1 and CE-J.2.1	U	P											X		
Urban Forest Plan	CE-J.3.1.1	Formulate master tree planting plan while developing urban forest elements of community plans.	U											X			
Urban Forest Plan	CE-J.3.1.2	Master tree planting plan to be completed and approved as part of CE-J.2.1.	U						C					X			

Program Area	Action	Description	Urban Forest Manager	Planners	Horticulturalist (Streets)	Parks and Open Space	Code Enforcement	Public Information	CFAB	FY 2015 (May-June)	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	After FY 2020
Urban Forest Plan	CE-J.3.1.3	Develop master tree planting-plan for areas not covered by a community plan as per CE-J.2.2.	U		H	O&P							X			
Urban Forest Plan	CE-J.3.2.1	Review Urban Forest Master Tree Planting Plan every five years and update as necessary	U						C							X
Permitting	CE-J.4.1.1	Review current development policies and procedures to ensure that maximum benefit from street trees.	U	P							X					
Permitting	CE-J.4.1.2	Begin process to revise policies to implement urban forest element into development process	U	P								X				
Enforcement	CE-J.4.2.1	Develop enforcement program that may include fines.	U				CE						X			
No-fee Permits	CE-J-4.3.1	Review and rewrite the No Fee Permit Process based on current needs.	U	P			CE				X					
Climate Action Plan	CE-J.4.4.1	Review policies for compliance with Climate Action Plan regarding the use of trees.	U	P					C		X					
Stormwater	CE-J.4.5.1	The Urban Forest Manger together with the Storm Water Division will investigate ways of using trees and other green infrastructure activities to reduce storm water runoff.	U		SWD				C							X

Program Area	Action	Description	Urban Forest Manager	Planners	Horticulturalist (Streets)	Parks and Open Space	Code Enforcement	Public Information	CFAB		FY 2015 (May-June)	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	After FY 2020
Partnerships	CE-J.5.1.1	Identify non-profit and other community organizations for possible partnerships to enhance the city's urban forest.	U		H	O &P						X					
Partnerships	CE-J.5.1.2	Engage partners to discuss partnerships.	U		H	O &P						X					
Partnerships	CE-J.5.1.3	Develop program with opportunities for partnerships	U					PIO					X				
Partnerships	CE-J.5.1.4	Organize partnership kick-off event in conjunction with 'Make a Difference Day.'	U		H	O &P		PIO	C					X			
Education	CE-J.5.2.1	Assess current educational outreach program for effectiveness.	U					PIO				X					
Education	CE-J.5.2.2	Develop new educational outreach programs to promote the benefits of trees.	U					PIO				X					
Education	CE-J.5.2.3	Compile a cost/benefit analysis for the city's urban forest using cutting edge metrics.	U												X		
Education	CE-J.5.2.4	Identify public health benefits derived from city's urban forest.	U												X		
Education	CE-J.5.3.1	Develop tree-watering and conservation guidelines as part of educational outreach in CE-J.5.2.2.	U					PIO				X					

Appendix B: Proposed Revised Street Tree Selection List—Shade Trees

*(from SelecTree)   #(from WUCOLS)

Botanical Name	Common Name	Height range *	Spread *	Type	Water Needs—Coastal #	Water Needs—Inland #	Native (yes)	Suitable under utility lines
Acacia pendula	Weeping Acacia	25'	15'	E	M	M		Yes
Acacia stenophylla	Shoestring Acacia	20'-30'	10'-30'	E	L	L		
Acacia subporosa (or cognata)	River Wattle (Bower Wattle? Per botanical)	20'-35' (20'-30')	20'-30' (same)	E	L	?		
Acca sellowiana aka Feijoa sellowiana	Pineapple Guava	20'		E	L	M		
Afrocarpus gracilior aka Podocarpus gracilior	African Fern Pine	50'-65'	50'-60'	E	M	M		
Agonis flexuosa	(Peppermint Tree)	25'-35'	15'-30'	E	L	L		Yes
Albizia julibrissin	Silk Tree	20'-30'	20'	D/F	L	L		
Angophora costata aka Angophora cordifolia	Gum Myrtle (Rose Gum)	50'	none listed	E	L	M		
Arbutus 'Marina'	Marina Madrone (Strawberry tree)	40'-50'	40'	E/F	L	M		Yes
Arbutus unedo	Strawberry Tree (Strawberry Madrone)	20'-35'	20'-35'	E/F	L	L		Yes
Bauhinia blakeana	Hong Kong Orchid	20'	20'	D/F	M	M		Yes

Botanical Name	Common Name	Height range *	Spread *	Type	Water Needs— Coastal #	Water Needs— Inland #	Native (yes)	Suitable under utility lines
Bauhinia forficata (No trees found; Bauhinia aculeata?)	White Orchid tree	25'-30'	15'-20'	E/F	M	M		Yes
Brachychiton acerifolius	Flame tree	65'	30'	D/F	L	M		
Brachychiton discolor	Queensland Lacebark, Pink Flame Tree							
Brachychiton populneus	Australian Bottle tree	30'-50'	30'	D	L	L		
Callistemon citrinus	Lemon Bottlebrush	20'-25'	25'	E/F	L	L		Yes
Callistemon salignus	White Bottlebrush	20'-25'	10'-15'	E/F	L	?		Yes
Callistemon viminalis	(Weeping) Bottlebrush	25'	15'	E/F	L	M		Yes
Calodendrum capense	Cape Chestnut	40'	25'-40'	D/F	M	M		
Cassia excelsa (see Cassia Fistula)	Crown of Gold (Golden Shower)	25'-35'	25'-30'	E				
Cassia leptophylla	Gold Medallion tree	25'	20'-25'	D/F	M	M		Yes
Cercidium floridum aka Parkinsonia florida	Blue Palo Verde	35'	30'		VL	L		Yes
Cercidium microphyllum aka Parksinonia microphylla	Little Leaf Palo Verde	35'	25'		VL	L		Yes
Cercidium x 'Desert Museum' Thornless	Desert Museum Palo Verde	20'	20'					Yes
Cercis canadensis and var. 'Forest Pansy' and 'Mexicana'	Eastern Redbud (and Purple Leaf Eastern Redbud)	25' (20'-30')	20'-25'	D/F E/F	M	M		Yes
Cercis occidentalis	Western Redbud	25'	15'-20'	D/F	L	L	Yes	Yes
Chilopsis linearis	Desert Willow	25'	10'-20'	D/F	VL	L	Yes	

Botanical Name	Common Name	Height range *	Spread *	Type	Water Needs—Coastal #	Water Needs—Inland #	Native (yes)	Suitable under utility lines
Chionanthus retusus	Chinese Fringe Tree	20'	10'-15'	D/F	M	M		Yes
Chitalpa tashkentensis	Chitalpa	25'-35'	30'	D				Yes
Cupressus (arizonica var.) glabra	Smooth Arizona Cypress	35'	20'	C				
Cupressus forbesi (Hesperocyparis forbesii)	Tecate Cypress	25'	20'	E	VL	VL		
Eriobotrya deflexa	Bronze Loquat	25'	25'	E	M	M		Yes
Erythrina Crista-Galli	Cockspur Coral Tree	20'	20'	D	L	L		Yes
Erythrina humeana	Natal Coral	25'	25'	D	L	M		
Eucalyptus citriodora (Corymbia citriodora)	Lemon-Scented Gum	80'-160'	50'-100'	E				
Eucalyptus ficifolia	Red-Flowering Gum	35'	15'-60'	E				
Eucalyptus leucoxylon	White Ironbark	30'-90'	18'-60'	E	L	L		
Eucalyptus polyanthemos	Silver Dollar Gum	65'	15'-45'	E	L	L		
Eucalyptus torquata	Coral Gum	20'	15'-30'	E	L	M		Yes
Fraxinus oxycarpa (Faxinus angustifoia 'Raywood')	Raywood Ash	35'	20'	D	M	M		
Geijera parvifolia (parviflora)	Australian Willow	30'	20'	E/F	L	M		Yes
Heteromeles arbutifolia	Toyon	25'	20'	E			Yes	Yes
Hymenosporum flavum	Sweetshade	20'-35'	15'-20'	E/F	M	M		
Ilex altaclarensis 'Wilsonii' (Ilex 'Wilsonii")	Wilson Holly	25'	10'-12'	E				Yes
Jacaranda mimosifolia	Jacaranda	50'	35'-60'	D/F	M	M		

Botanical Name	Common Name	Height range *	Spread *	Type	Water Needs—Coastal #	Water Needs—Inland #	Native (yes)	Suitable under utility lines
Koelreuteria bipinnata	Chinese Lantern	35'	35'	D/F	M	M		
Koelreuteria paniculata	Golden Rain (Goldenrain Tree)	35'	15'-25'	D/F	L	L		
Lagerstroemia indica hybrids (disease resistant varieties)	Crape Myrtle	25'	20'	D/F	M	M		Yes
Laurus nobilis	Sweet Bay	35'	30'	E	L	L		
Ligustrum lucidum	Glossy Privet	35'-50'	35'	E				
Liquidambar styraciflua 'Rotundiloba'	Rotundiloba Sweetgum	65'	20'-25-	D	M	M		
Lophostemon confertus aka Tristania conferta	Brisbane Box	50'	40'	E	M	M		
Lyonathamnus floribundus and var 'Aspelinifolius'	Catalina Ironwood	50'-60'	40'	E/F	L	L	Yes	
Magnolia grandiflora 'Little Gem'	Little Gem (Little Gem Magnolia)	20'	10'	E/F	M	M		Yes
Magnolia grandiflora 'Samuel Sommer'	Samuel Sommers (Samuel Sommer Southern Magnolia)	50'	30'	E	M	M		
Melaleuca linarifolia	Flaxleaf Paperbark	35'	35'	E/F	L	L		
Melaleuca quinquenervia	Cajeput Tree	35'	20'	E/F	L	M		
Metrosideros excelsus (Metrosideros excelsa)	New Zealand Christmas Tree	35'	35'	E/F	M	M		
Olea europaea fruitless	Olive "fruitless" (Swan Hill Olive?)	35'	60'	E	L	L		
Olneya tesota	Desert Ironwood	35'		E			SW	
Parkinsonia aculeata	Jerusalem Thorn, Mexican Palo Verde	25'	25'		L	L		Yes

Botanical Name	Common Name	Height range *	Spread *	Type	Water Needs—Coastal #	Water Needs—Inland #	Native (yes)	Suitable under utility lines
Photinia fraserii	Fraser Photinia	20'	20'	E/F	M	M		Yes
Pinus canariensis	Canary Island Pine	50'-80'	20'-35'	E	L	M		
Pinus eldarica (Pinus brutia)	Afghan Pine, Mondell Pine	65'	15'-25'	C	VL	L		
Pinus pinea	Italian Stone Pine	40'-80'	40'-60'	C	L	L		
Pinus torreyana	Torrey Pine	65'	30'-50'	E	L	M	Yes	
Pistacia chinensis	Chinese Pistache	65'	40'	D	M	M		
Pittosporum rhombifolium	Queensland Pittosporum	25'	12'-25'	E	M	M		
Pittosporum tenuifolium	Tarata Pittosporum	35'	10'-15'	E/F	M	M		
Platanus acerifolia 'Bloodgood'	London Plane	65'	30'-40'	D	M	M		
Platanus mexicana	Mexican Sycamore							
Platanus racemosa	California Sycamore	30'-80'	20'-50'	D	M	M	Yes	
Podocarpus henkelii	Long Leafed Yellowood							
Podocarpus macrophyllus	Yew Pine	40'-50'	20'	E	M	M		
Prosopis glandulosa (?var.torreyana?)	Mesquite (?HoneyMesquite?)	20' (or 25')	20'	D	Y	L	Yes	
Prosopis Thornless Hybrids	Chilean Mesquite cultivar				L	L		
Prunus caroliniana	Carolina Laurel Cherry	35'	15'-25'	E	M	M		
Prunus Ilicifolia and 'Lyonii'	Hollyleaf Cherry	25'	15'-25'	E	VL	VL	Yes	
Pyrus calleryana 'Chanticleer'	Callery Pear (Flowering Ornamental Pear)	50'	15'	D/F	M	M		
Quercus agrifolia	Coast Live Oak	65'	65'+	E	VL	L	Yes	
Quercus engelmanii	Mesa Oak (or Engelmann Oak)	50'-65'	90'+	D	VL	L	Yes	
Quercus ilex	Holly Oak	65'	65'	E	L	L		Yes

Botanical Name	Common Name	Height range *	Spread *	Type	Water Needs—Coastal #	Water Needs—Inland #	Native (yes)	Suitable under utility lines
Quercus suber	Cork Oak	70'	70'	E	L	L		
Quercus virginiana	Southern Live Oak	50'	75'+		M	M		
Raphiolepsis 'Majestic Beauty'	'Majestic Beauty' (Majestic Beauty Indian Hawthorn	20'	12'-15'	E/F	M	M		Yes
Rhus lancea	African Sumac	25'	20'-35'	E	L	L		Yes
Sapium sebiferum (Triadica sebifera)	Chinese Tallow Tree	35'	25'-35'	D	M	M		
Schinus molle	California Pepper (Peruvian Pepper Tree)	25'-50'	25'-40'	E	VL	L		
Senna spectabilis Cassia fistula)	Crown of Gold (Golden Shower)	25'-30'	35'		L	L		
Spathodea campanulata	African Tulip (Tree)	50'	30'	D/F	M	/		
Stenocarpus sinuatus	Firewheel Tree	35'	15'	E/F	M	M		Yes
Tabebuia avellanedae	Lavender Trumpet Tree	25'	25'	D				Yes
Tabebuia chrysotricha aka Handroanthus chrysotrichus	Golden Trumpet Tree	25'	25'	D	M	M		
Tabebuia ipi* aka Handroanthus impetiginosus	Pink Trumpet	25'	25'	D/F	M	M		Yes
Tecoma stans	Yellow Bells	20'	10'-20'		L	L		Yes
Tipuana tipu	Tipu Tree	50'	30'-55'	D/F	L	M		
Tristania laurina aka Tristaniopsis laurina	Water Gum-Elegant Brisbane	25'	6'-8'	E/F	M	M		Yes
Ulmus parvifolia 'Sempervirens' and "Drake"	Chinese Elm	65'	70'	E	M	L		

Botanical Name	Common Name	Height range *	Spread *	Type	Water Needs— Coastal #	Water Needs— Inland #	Native (yes)	Suitable under utility lines
Zelkova serrata	Sawleaf Zelkova	65'	40'		L	M		

Appendix C: Revised Street Tree Selection List—Palms

*(from SelecTree)   #(from WUCOLS)

Botanical Name	Common Name	Height range *	Spread *	Type	Water Needs— Coastal #	Water Needs— Inland #	Native (yes)	Suitable under utility lines
Archontophoenix cunninghamiana	King Palm	50'-70'	10'-15'	P	M	M		
Brahea armata	Mexican Blue Palm	20'-50'	12'-25'	P	L	L		
Brahea brandegii	Hesper Palm (San Jose Hesper Palm)	40'-50'	15'	P	M	L		
Brahea edulis	Guadalupe Palm	35'	15'	P	L	L		
Butia capitata	Pindo Palm	15'-25'	10'-15'	P				
Chamaerops humilis	Mediterranean Fan Palm			P				
Dypsis decaryi	Triangle Palm	20'	12'-15'	P	M	M		
Jubaea chilensis	Chilean Wine Palm	65'	25'	P	L	M		
Livistona australis	Australian Fan Palm			P				
Livistona decipiens	Ribbon Fan Palm			P				
Phoenix dactylifera 'Medjool'	Canary Island Date Palm			P				
Phoenix Roebellini	Pygmy Date Palm			P				
Trachycarpus fortuneii	Windmill Palm			P				